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THE
VETERINARY JOURNAL

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SEPTEMBER, 1930.

THE 11th INTERNATIONAL VETERINARY CONGRESS.

THE 11th International Veterinary Congress, so long looked forward to as the reunion which was designated to re-establish the link in the chain which had been broken by the Great War, has come and gone.

Its purpose has been fulfilled to the fullest extent and the Veterinary Profession throughout the world owes a debt of gratitude to those who organised it, and to those who so effectually supervised and carried out the arrangements.

It was a wise verdict which decided that it should be held in England —and this, of course, meant London—not only because of the vast resources and attractions of this great city, and the convenience of reaching there—but because it was in London that the 10th Congress was actually in process of being held when the tragic events of 1914 brought its opening ceremonies and proceedings to a sudden close.

It was a gracious act, too, on the part of the Earl of Harewood to consent to perform the opening ceremony, as his name is well-known to every member of the veterinary profession in Great Britain, as one who not only wishes us well but who has already proved his practical interest by personal efforts on our behalf.

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The numbers of delegates and others who took part in the proceedings and social gatherings exceeded any other of the preceding Congresses, and everyone agreed that the pabulum of material, both scientific and social, was well staged.

The energies of the President, Sir John McFadyean, and the Secretary, Dr. Fred Bullock, together with the combined efforts of the members of the various Committees, were taxed to the utmost, and to say that they emerged triumphant is to give the only expressive phrase, for the whole affair went off like clockwork and was a triumph of good organisation.

Even the Veterinary Student, whose pocket is well known to be limited in depth, had not been forgotten, and for the small subscription of ten shillings could obtain the privilege of Membership. Quite a number, not only from the British Colleges, but from Continental Schools, were amongst the scientific audiences and at the social functions.

The clerk of the weather was reasonably good tempered; and although on some of the trips during the week and the week subsequently it was necessary to carry waterproofs, on the whole there was little to complain of.

To reprint the papers in the VETERINARY JOURNAL would, of course, be impossible, nor is it necessary, as complete copies of each have been sent to every Congress Member.

They included such widely divergent titles as Variola, Theilerósis, Fowl Typhoid and Bacillary White Diarrhœa, Anthrax, Foot and Mouth Disease, Swine Fever, Milk Fever, Fowl Pox, Drug treatment for Worms, Genetics, Rabies, Tuberculosis, Biological Product Standardisation, Mastitis, Trypanosomiosis, Abortion, Blackleg, Scientific Feeding, Deficiency Diseases, Animal Husbandry, Distemper, Sterility, Rinderpest, Public Health, Legal Aspect of Veterinary Medicine and Surgery, and numerous others, of some of which we publish a brief summary on subsequent pages.

General Articles

THE VETERINARY PROFESSION IN FRANCE.

By PROF. V. ROBIN,
of the Alfort School.

It was in our country that, impelled by Bougelat and his successors, animal medicine—formerly restricted to the sphere of empirical knowledge—assumed a new character by reason of its subjection to scientific methods. In the nineteenth century, its development proceeding, it attained in every civilisation high rank among the biological sciences.

Since 1920 and the comparatively brief crisis occasioned by the considerable decline in the number of French cattle and, in a more general way, by the country's efforts to adjust itself to post-war economic conditions, the Veterinary Profession has resumed the progressive evolution which, 150 years ago, began to relate it more and more closely to the economics of the country.

In the large towns the substitution of mechanical for horse traction has brought about the entire disappearance of numerous practices, with which were connected important farriery establishments. On the other hand canine medicine, once the monopoly of a few rare specialists, has developed so rapidly that, in Paris at least, the total number of veterinarians is practically the same as ever. Elsewhere, in the country districts, horse-breeding has fallen off to a noticeable degree, in consequence of the towns ceasing to be the markets they once were. Nevertheless the progress of mechanisation does not seem to produce any really alarming competition with animal traction. When one considers that the growing demand for meat and milk has stimulated the rearing of cattle, the value of which has perceptibly increased, and when one adds that the veterinarian is being called in more and more frequently to attend to animals about which he never used to be consulted (sheep, goats, poultry, etc.), it will be understood that the situation of the rural Veterinary Practitioner has very definitely improved during the last ten years.

It may be added that the Colonies are calling to an increasing extent for trained, highly specialised veterinary men who can undertake the direction of prophylactic measures in relation to contagious diseases and are able to supervise the rearing of cattle in our over-sea possessions. With the object of forming a body of veterinarians trained for this important responsibility with regard to the care and rearing of colonial

stock, there has existed since 1920 at the Alfort School an Institute of Exotic Veterinary Medicine, which was officially recognised by an Act of February 21st, 1928. Here French veterinarians intending to pursue a colonial career receive, together with a number of foreign practitioners, theoretical and practical instruction bearing upon microbic diseases, bacteriology, parasitology, colonial agronomy, etc. The instruction is given by lecturers of the Alfort School, the Pasteur Institute, the Faculty of Medicine, the Agronomic Institute, the Natural History Museum, and by colonial veterinarians home on leave.

At present the total number of French civil Veterinary Practitioners is 3,525. In this figure are included: 213 veterinarians practising in the Colonies, in Algiers, or in the Protectorates, 40 members of the staffs of the three veterinary schools, 50 veterinarians in the Sanitation Service of the Department of the Seine, and lastly 74 general inspectors and regional directors of the various sanitation services.*

In 1923 French veterinarians won an important victory. For a long while the veterinary associations (headed by the National Syndicate), the schools, and numerous student groups had been recommending a change in the professional title, which failed to match the importance of our labours, and representations were made that the degree of Doctor should be instituted. Inspector-General Leclainche had been pursuing a campaign with this object for 20 years in *la Revue Générale* and had, through study of the situation in foreign countries, amassed a quantity of valuable evidence, which formed the basis of the debate in the legislature. The Act of July 31st, 1923, stipulated that the degree of Veterinary Doctor should be conferred by the Minister of Public Education upon such students of the schools as had successfully undergone examinations at the conclusion of their studies and had submitted theses to the Faculties of Medicine of Paris, Lyons, or Toulouse. The same Act prescribed penalties for persons who might wrongfully assume the titles Veterinary Doctor or Veterinarian. Veterinarians who held diplomas before the promulgation of the Act were authorised to submit theses with a view to the conferment of the degree of Doctor. Numbers of them availed themselves of this privilege, which occasioned the publication of original works, a number of them being of very great value.

Great hopes centre upon the early application of a new law on the prophylaxis of tuberculosis. The Bill, submitted to the legislature on October 31st, 1924, was adopted by the Senate, following upon the report of our colleague, Senator Beaumont, and thanks to the eloquent intervention of Professor Vallée, Government Commissioner; it is to

*It should also be noted that eight veterinarians have seats in the legislature, one a Senator, the others Deputies.

be examined immediately by the Chamber of Deputies. The law in question inaugurates, in the struggle against bovine tuberculosis, a system based on collaboration between owners of animals and the health officials, who are to intervene henceforth not in a repressive, but in an advisory capacity. As the law institutes the monopoly of the use of tuberculin in favour of veterinarians, and establishes the principle of general inspection of meatstuffs, its importance is manifest, not only for the Veterinary Profession, but also for sanitary police and public hygiene.

Closely associated with this idea is an extremely active campaign, which has been proceeding for some time, to extend our professional functions to the inspection of milk. Professor Porcher, principal of the Lyons School and founder of the journal, *Milk*, whose magnificent works on the physico-chemistry of milk are widely known and whose laboratory is the resort of research workers from all countries, our colleague Monsieur Roeland, a member of the Paris municipal council, Monsieur Rennes, regional director of Veterinary Services, these have been the chief actors in this movement for the control of shippons, the health of animals, and also of the persons employed in the production and handling of milk. At the moment the only result achieved has been the issue by the Ministry of a Circular Letter, dated November 17th, 1927, recommending the optional control of milk, and a recent order by the Prefect of Police prescribing this control in Paris under the direction of the Veterinary Service. Keeping pace with these efforts, the schools have organised an important course of instruction on milk and its allied industries, so that veterinarians may be equal scientifically to the responsible task which is bound to fall to them before long.

The defence of professional interests is, for the most part, conducted by the National Syndicate of French and Colonial Veterinarians, which, in 1921, replaced the Federation of Veterinary Associations. Possessing since its formation a remarkably active president, Monsieur Breton, the National Syndicate includes in its membership either directly or indirectly, through the media of departmental and regional sections, practically all French veterinarians. It has consistently occupied itself with the material and moral improvement of the professional body. Its action, allied with that of Monsieur Leclainche, has procured, as has already been said, the creation of the doctorate. It has fought to preserve for veterinarians the right, contested by the pharmaceutical chemists, to reserve, administer, or sell drugs which are indispensable in the treatment of animals ; it has concentrated on persuading the agricultural world of the advantages of collaboration with veterinarians in all questions of stock-breeding ; it has created a

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pensions fund and a litigation service, which affords technical or financial aid to its members when, in the exercise of their profession, they are called upon to appear in civil or administrative courts. It publishes a monthly information bulletin, which forms a complete collection of all laws, rulings, court decisions, etc., which are of interest to veterinarians.

One conveys an idea of the importance of this body by pointing out that it is represented in the Government Councils, notably the Higher Council of Veterinary Education and the Consultative Committee for Epizootics. It is also represented in numerous associations, such as the National Alliance of Agricultural Associations, the Executive Committee of the French Stock-rearing Service, the Federation of Horse Industries, etc.

THE VETERINARY PROFESSION IN THE UNITED STATES OF AMERICA.

By PIERRE A. FISH,

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THE Veterinary Profession was slow in getting established in the United States prior to 1850. The veterinarians were too few to enumerate in the government census. In an article published by A. Liautard in 1877, it is stated that in 1818 in the State of Pennsylvania a James Carver, who used the title of V.S., offered a book for sale on the anatomy, physiology and pathology of the horse and other domesticated quadrupeds. At about 1827, John Rose, a graduate from Prussia, came to New York and established a large practice. Some ten years later C. C. Grice, also located in New York, and he was followed by R. H. Curtis, A. Lockhart, R. H. Budd and C. Pilgrim, each with the title of M.R.C.V.S. These men may be regarded as the pioneers of the Veterinary Profession in New York State and the country as a whole. On rare occasions an American, desiring a real veterinary education, went to London or Alfort to acquire it, because of the absence of schools here. In 1836 the name of William Miles of New York was included in the list of those obtaining a diploma from the London Veterinary College. There were doubtless a number of quacks, posing as veterinarians, because in this early period there were no laws to prevent their activity.

In 1850 (7th United States Census Report) there were listed 46 veterinarians of which number 20 were located in New York State.

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The remaining 26 were divided among seven other States. It is quite certain that a considerable proportion of the 46 were not graduates of veterinary schools. The numerical growth of the veterinarians since 1850 is concisely shown in the following table :

Census.	Year.	Veterinarians.	Increase %.
7th	1850	46	
8th	1860	392	752·1
9th	1870	1,176	197·4
10th	1880	2,130	82·6
11th	1890	6,494	20·5
12th	1900	8,163	25·7
13th	1910	11,652	42·7
14th	1920	13,494	15·7

The 15th or 1930 census has recently been compiled but the reports are not yet available.

Following 1890 it will be noted that the rate of increase is decidedly lower than in the preceding period. This is undoubtedly due to the fact that in the late eighties a few of the States, and later a greater number, enacted laws regulating practice and requiring a certain standard of general education before taking up the veterinary curriculum. Up to 1886 there were no legal restrictions against anyone assuming the title of veterinarian and carrying on practice as best he could.

The census of 1870 gave information on the nativity of the veterinarians as follows: Americans, 63·7%; British, 20·4%; Germans, 10·5%; other, 5·3%. The inference seems justifiable that in the early years an occasional foreign veterinarian (mostly British) came to our shores and established lucrative practices and that for a time, until schools were established, these foreign veterinarians were the only legitimate graduates in this country.

Veterinary Schools.

It is evident enough that progress in veterinary medicine could not be realized without the establishment of centres of learning where instruction in the technical knowledge of domesticated animals could be obtained. It was a courageous act to attempt to establish a school at a time when anyone who desired to practice veterinary medicine might do so without let or hindrance from the law. The first few attempts in the United States were failures. They were in advance of the times. Nevertheless, within a few years, schools were established which attracted some students and were maintained for a time, although the legal conditions remained unchanged.

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Apparently, the first systematic step in veterinary education was the granting of a charter in 1852 by the legislature of Pennsylvania. The school did not operate, however, until 1859-60. There were two students in attendance and the school did not long survive.

In May, 1855, the Boston Veterinary Institute was incorporated by the legislature of Massachusetts through the energy of Dr. G. H. Dadd. A course of three years was announced with a four months' session each year. The number of students in attendance is not stated but they were evidently few. After a period of three years the school was discontinued.

In 1857, through the effort of Dr. John Busteed, a charter was obtained from the legislature of the State of New York for the establishment of the New York College of Veterinary Surgeons. Doctor Ralston, M.R.C.V.S., who had seen service in India, was the Principal, and Doctor Busteed was likewise on the faculty. On account of some failure on the part of the faculty, the school did not begin operations and the place was used as a livery stable. It was destroyed by fire in 1865 or 1866. Later, steps were taken to reorganize it and in 1864-5 the first session was held. At about 1873 the college closed its doors and was succeeded by the American Veterinary College under the management of Doctor Liautard. In 1877 the New York College of Veterinary Surgeons was again reorganized.

The earlier schools, as well as numerous later ones, have been designated private schools because they were not affiliated with universities or colleges of general culture. The schools were supported by the fees of the students and the fees were used principally to compensate the members of the faculty for their services. Nevertheless, especially in the early days when students were few, due recognition should be given to those faculty members who gave of their time at some sacrifice and showed an honest devotion to the advancement of veterinary education.

Although not in the United States, mention should be made of the Ontario Veterinary College, established by Andrew Smith in Toronto, Canada, in 1862. It was the first of the early veterinary schools on the American Continent to survive until the present, with a record of 68 years of continuous service. It has, of course, undergone changes from time to time to uphold and maintain the present standards.

When Cornell University was established in 1868, it was the desire of the founder that a department of veterinary medicine be included, with equal rank and on a par with any other department in the University. Dr. James Law, a native of Scotland, was selected for this work. From 1868 to 1908 Doctor Law taught veterinary medicine at Cornell. Between 1871 and 1885 four degrees of B.V.S. were granted. It was

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then decided to discontinue the granting of veterinary degrees but the courses were continued and were well attended by agricultural students and others who planned later to enter the Veterinary or Medical Professions. In 1894 the State Legislature passed a law establishing the New York State Veterinary College at Cornell. In 1896 its doors were opened for instruction. The arrangement was that the State should finance the institution and Cornell should administer it. The New York State Veterinary College is the successor of the Department of Veterinary Medicine of Cornell University. The University has offered and administered veterinary instruction from 1868 to the present, a period of 62 years.

The remaining schools, now active, were established as follows: Iowa State, 1879; Ohio State, 1884; University of Pennsylvania, 1884; State College of Washington, 1896; Kansas State, 1905; Alabama, 1907; Colorado, 1907; Michigan, 1909; Texas, 1916; Georgia, 1918. There are now eleven veterinary schools functioning in the United States. At one time or another since 1850, including the schools now alive, there have been forty-six veterinary colleges organized in this country. In Canada, veterinary instruction is offered by the Ontario Veterinary College at Guelph and by the Quebec Veterinary School at Oka, Canada. The latter school gives its instruction in French.

The discussion of the veterinary schools could be greatly expanded, if space were available. Some of them have been charged with unethical proceedings in their management and, in some cases, this may have been true. It is well, however, to consider the environment in which the earlier schools were placed. There was undoubted ignorance of the citizens on matters relating to veterinary service; on the part of some there may have been contempt because quacks were prevalent and accomplished more harm than good in the treatment of patients. Matters which would not bear the scrutiny of present day ethics or the ethics of European countries at that early time undoubtedly occurred and to some extent they may be condoned because of the general unsatisfactory and chaotic state of affairs. The Veterinary Profession was in the process of birth and the parturient pains were strong. It must be remembered that in those days veterinary ethics were in a nebulous or barely formative stage. Some who were not graduates learned from experience and, possessing a desire to advance the veterinary cause, accomplished some good. The advent of graduate veterinarians from Great Britain and Europe may also be considered as a factor in developing the ethical sense in this country. The schools have been the producers of veterinarians; without them there could have been no profession.

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Laws to Protect Veterinary Practice.

The first step in the advancement of the profession was the educational step; the next was that of the protection of the legitimate practitioner who had spent time and money to become adequately trained to diagnose disease and treat sick animals. The protection of the animals was also involved, because the increment of loss might amount to a considerable sum if the care of animal patients was left in the hands of untrained and incompetent quacks. With the enactment of the proper laws there was a chance for the Veterinary Profession to arrive.

The first State to enact such a law was New York, in 1886. By 1899, twelve States; by 1909, thirty-two States; and by 1916, forty-four States were thus properly safeguarded. A period of thirty years was required to furnish this protection. Along with the possession of technical knowledge, some evidence of a preliminary general education was also required. Standards have gradually been pushed higher. The present requirements are four years of high school work for entrance and four years of technical training in the veterinary school to obtain the degree of Doctor of Veterinary Medicine. In the early schools the college year consisted of four months. In many the attendance required was two years and the work of the second year was a repetition of that given in the first. The veterinary course has developed from a curriculum of four months to a graded course of thirty-six months distributed over four years at the present time. The total attendance in the eleven schools during the past year was 1,089.

Veterinary Organizations.

Even in the early days it was recognized that " in union there is strength " and that mutual benefit and improvement would result from contact and discussion of subjects of interest to all. Like the early veterinary schools, the first effort resulted in failure. The effort was made in advance of the times.

The first step toward forming a veterinary organization was taken in 1854 at Philadelphia, Pa. The preamble of the constitution adopted States. There has been no association formed, as yet, among the Veterinary Practitioners of the United States for the defence of the rights and privileges of the practitioners of this art, or for the elevation of the standard of requirements necessary for its successful pursuit; and as Philadelphia is acknowledged, and appears to be foremost in the cultivation of medical knowledge, it, therefore, appears to be an appropriate place for the establishment of an institution designed to promote veterinary medicine. The name selected for the organization

was The American Veterinary Association. We can find no further record of its activity and it may be assumed that the association soon became disorganized.

In 1863, nine years later, another effort was made on June 9th and 10th at the Hotel Astor in New York City. The organization was called the United States Veterinary Medical Association. Dr. J. H. Stickney of Massachusetts was the first president; Dr. A. Liautard of New York the first secretary, and Dr. A. S. Copeland of New York the first treasurer.

In spite of its name it was, at first, largely a local organization. The meetings were held semi-annually for a period of twenty-seven years. With only five exceptions these meetings were held either at Boston, Massachusetts, or New York City. In 1890, the meetings were changed from the semi-annual to the annual basis, and there was likewise a change in policy relative to the place of meetings. Instead of restricting them to the eastern shore, they were held in various parts of the country and the title of the association became really representative of the work it was to do. In 1898, the name was changed to the American Veterinary Medical Association. One obvious advantage in the change of title was that our brethren in Canada might feel free to participate on equal terms with the veterinarians of the States. The Canadians have responded generously and have been an active power in the organization.

The association must have been weak in the earlier years, but it held on and, with the changed policy of meeting in various sections of the country, the membership grew. At the present time the membership is 4,516, with 67 applications pending, and this number is approximately one-third of all the veterinarians in the country. It has been claimed that the American Veterinary Medical Association is the largest veterinary organization in the world. It has a large reserve to draw upon and in point of numbers it may become still greater.

In addition to the National Association, there are many others. The next in order are formed by groups of States, such as the Missouri Valley and South-Eastern States organizations. Many of the States have State societies and in some States there are in addition local societies consisting of one or more counties.

Veterinary Periodicals.

The first veterinary journal to be established in the United States was published by George H. Dadd at Boston, Massachusetts, in 1851. Its title was the "American Veterinary Journal." It lasted but one year. In 1855 it was re-established and continued for three years

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contemporaneously with his school. It was a monthly publication and the subscription price was one dollar a year. Considering the times and the various difficulties and handicaps encountered, it was, in the writer's opinion, a creditable production.

The United States Veterinary Medical Association sponsored a publication and entrusted it to Doctor Liautard. Later it was given to him. In January, 1877, it appeared under the title of the "American Veterinary Review," with Doctor Liautard as editor. It grew with the succeeding years and upon Doctor Liautard's return to France, Dr. Roscoe Bell of New York became managing editor. After Doctor Bell's death, Dr. William Herbert Lowe was editor for a short time. It then came under the control of Dr. R. W. Ellis. In 1915 it was purchased by the American Veterinary Medical Association. As the Journal, it has been successively edited by P. A. Fish, W. H. Dalrymple, J. R. Mohler and the present editor, H. P. Hoskins. As the Review and Journal of the A.V.M.A., it has given fifty-three years of continuous service. It was born in the United States Veterinary Medical Association and after a number of years of service as a periodical under private management, it finally came back to the organization that gave it birth.

At about 1879 the " Journal of Comparative Medicine and Surgery" appeared as a quarterly magazine. It was edited for some years by Doctor Conklin. The title was later changed to the " Journal of Comparative Medicine and Veterinary Archives," and in 1891 it became a monthly. Doctor Huidekoper became editor later and also Dr. W. Horace Hoskins. The Journal was discontinued in May, 1903.

In 1905 the " Missouri Valley Veterinary Bulletin " was published with D. M. Campbell as editor. In 1910 it became the " American Journal of Veterinary Medicine." In 1920 the title was changed to " Veterinary Medicine " and is still under the same management.

In 1911, " The Cornell Veterinarian " was published for a short time semi-annually and then, as at present, as a quarterly. The editors have been P. A. Fish, C. P. Fitch and D. H. Udall, the present incumbent.

In 1920, the " North American Veterinarian " began its existence under the editorship of J. V. Lacroix. It is still under his management.

Four of these publications are still living and are apparently in a thriving condition.

There are also commercial publications issued by firms dealing in veterinary supplies, which are sent gratuitously to members of the profession. The project obviously is to advertise their supplies. These bulletins are newsy in character, but sometimes contain items pertaining to veterinary service of special interest.

The Bureau of Animal Industry.

This Bureau represents our defence against the foreign aggression of infectious diseases. It was conceived and established in 1884 through the efforts of Dr. D. E. Salmon by the United States Department of Agriculture. Dr. Salmon was appointed its first chief. After graduating from Cornell in 1872, he went to Alfort and also came under the influence and teaching of Pasteur. His preparation for the work that the future held in store for him was the best that could be obtained at that time. After his return to the States, and in due course of time, he was employed by the Secretary of Agriculture to investigate animal diseases in the Southern States.

Prior to the establishment of the Bureau, there were no restrictions against the shipment of animals from foreign countries and there was no regulation for quarantine. As a result, infectious diseases were also imported, among them tuberculosis, abortion disease and pleuro-pneumonia. Although an organized process for the eradication of bovine tuberculosis has been in operation for thirteen years and fine progress has been made, there is still a vast amount of work to be done. Contagious pleuro-pneumonia was eradicated and has not since made its appearance. Four or five outbreaks of foot-and-mouth disease have occurred from imported cattle. The outbreaks have been suppressed promptly, but at some cost. Rinderpest has never gained entrance here.

The establishment of the Bureau became a necessity in order to protect ourselves from the diseases sent over with the imported animals, and also because foreign countries refused to accept our animals on account ot the presence of disease here. The loss of foreign trade was threatening ruin to the American stock-raisers and this was a potent factor in getting Congress to take action.

The achievements of the Bureau are numerous and important. It began with a staff consisting of the chief, a clerk, and a force limited to twenty persons. This force has grown to 4,500 employees at the present time. New divisions have been added from time to time, but the stages of its growth cannot be detailed in this paper. A history of the establishment of the Bureau and its activities and achievements has been published by U. G. Houck (1924). It contains much valuable information for those interested.

Doctor Salmon was in charge of the Bureau from 1884 to 1905. During his administration proper quarantine regulations were established; contagious pleuro-pneumonia in cattle was eradicated; the cause of Texas fever was discovered and methods devised for its

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control; and, very important from the standpoint of public health, a federal meat inspection service was put into operation. His successors, the late Doctor Melvin, and Doctor Mohler, the present chief, have not only maintained high standards but have met new and intricate problems associated with the growth of a great organization for public service. The public has much to be thankful for in the protection it receives. In this protection, we believe, this country is not excelled.

Present Conditions.

Veterinary Practice is getting more diversified. In the early days it was confined to the horse. Now, since motor power has been substituted for horse power, there has been a great increase in small animal practice in the cities. In the country, in addition to routine work, some are paying especial attention to poultry practice, and to sterility and abortion in cattle, and assisting in the eradication of bovine tuberculosis. In the larger cities veterinarians are employed as municipal inspectors to protect the citizens from unwholesome meat and dairy products, and this practice must extend to smaller cities in the course of time. The large milk companies are using a number of veterinarians in their effort to supply a pure product for the consumers. In the government service, the Bureau of Animal Industry absorbs a rather large number each year and in the United States Army a few appointments are available. There is apparently a growing tendency to include veterinarians in problems relating to public health. The training they have received is an excellent preparation for this kind of work. One need, in the opinion of the writer, is a greater appreciation of what the Veterinary Profession has done and can do. There is no doubt that the value of veterinary service would be appreciated if it were *not* available.

Summary.

The Veterinary profession in the United States began its development in the last half of the nineteenth century. Prior to 1850 it was comprised of a few foreign veterinarians who had come to take advantage of the opportunities offered; an occasional American, who had gone overseas to obtain a veterinary education, and a number who took up practice without adequate training. In the decade beginning in 1850 all efforts to establish schools (except incorporation), associations and publications failed. In the following decade beginning in 1860, two schools and one association (A.V.M.A.) were organized which still survive. A few other schools were established and continued for various periods. The profession had taken root and, while growth took place rather rapidly, the safeguards that go with a profession have been

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slow of attainment. In the establishment of schools, the United States is one hundred years behind Europe. The evidence from our past indicates that the Veterinary Profession stands upon four legs: education, organization, publication and legislation. Education is fundamental; organization promotes strength and solidarity; publication diffuses knowledge; legislation protects. If there is weakness in any leg, the profession goes lame.

THE VETERINARY PROFESSION IN AMERICA.

By J. V. LACROIX, D.V.S.

THE first veterinarians to apply themselves in America were largely of British origin and training but the first veterinary school that began functioning in America was the New York College of Veterinary Surgeons and on its faculty was a Frenchman, Alexander Liautard. This school was opened in 1857. In 1860 Doctor Liautard founded the American Veterinary College in New York and continued as its leading spirit until his retirement and return to France.

In 1862 another veterinary school began in Toronto, Canada, under the direction of Andrew Smith, F.R.C.V.S., and this school continued to function as a private institution until its affiliation with the University of Toronto. The Montreal Veterinary School was founded in 1866 but its graduates never compared with those of the Toronto school in numbers. Until 1905 more than half of the veterinarians in the United States and Canada were graduates of the Toronto school.

In 1863, while the Civil war was in progress, a number of courageous and ambitious veterinarians from seven different States of the Union met in New York and formed the United States Veterinary Medical Association which organization continued as the national organization, becoming the American Veterinary Medical Association.

Veterinary education in America continued chiefly in private institutions until comparatively recently. The Iowa State College was the first endowed institution to offer a complete veterinary course and now there are eleven State schools functioning in the United States.

The largest veterinary organization in America (or elsewhere) is the Bureau of Animal Industry of the United States Department of Agriculture. The most important division of this organization is that of meat inspection. Of the various other activities of this bureau, important work done aside from meat inspection is that on tuberculosis eradication, tick eradication, hog cholera control and the activities of the zoological division and experiment station.

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There are some 8,000 veterinarians in practice in America and the majority have adjusted themselves to the changes necessitated by the advent of mechanical power for transportation and, to a certain extent, in farm operations. The character of instruction given to Veterinary Students has greatly changed during the past fifteen years and " short courses " for Veterinary Practitioners in many parts of the United States and Canada, serve annually to stimulate progress. It is said, in truth, that the United States is the safest place on earth to invest money in live stock, because of the character of the Veterinary Service of that country.

The Veterinary Corps of the United States Army gained sufficient recognition during the late war that it has become quite an important branch of veterinary activity and with the skeletal force of veterinarians in the reserves, comprises the military-veterinary service of the country.

The production of veterinary biologicals ranks high in America and hog cholera serum production has grown so that with fine plants, special equipment, trained veterinarians and others in this work, operate a vast industry.

DEVELOPMENT OF VETERINARY HYGIENE IN DENMARK DURING FIFTY YEARS—1879 TO 1929.*

A translated abstract from *Nordisk Hygiejnisk Tidsskrift*, X vol., 1929.

By H. LORENZEN,
Ringsted, Denmark.

(The author, who has for more than forty years planned and supervised a milk inspection for Copenhagen and herewith furnishes for all Denmark a detailed report on development and results gained through fifty years.)

INSTRUCTION in meat inspection was introduced at The Royal Veterinary and Agricultural High School (Copenhagen) at the beginning of 1880. Lecturer to Veterinary Jurisprudence, Bruun Pedersen gave some theoretic instruction, while the practical lessons in meat inspection were entrusted to the Chief Veterinary Surgeon of The Public Abattoirs of Copenhagen, C. C. Möller. In 1898, C. O. Jensen was charged with the theoretic education in meat inspection, while the practical instruction always has been guided by the changing Chief Veterinary Surgeons of The Public Abattoirs. At first the students had to pass no examination in meat inspection, but this was later on the case. Since 1887 courses of further instruction have been created, and now all veterin-

* By Colonel St. Friis, Chief of the Veterinary Sanitary Police, Copenhagen

arians have to pass such a course if they want a position within State Meat Inspection.

In 1899 lessons in milk hygiene were established, but it was only in 1907 that it became an obligatory subject. C. O. Jensen was the director of this instruction to 1922. In 1903 he had published the pioneering work " Lessons upon Meat and Milk Inspection." Courses of further instruction have also been created especially to such veterinarians who intended to be employed at public milk hygiene.

From 1922 instruction in meat and milk inspection was undertaken by M. Christiansen, Professor of Veterinary Hygiene and Bacteriology, and at the same time education in this subject has been considerably increased ; especially in regard to the scientific and practical laboratory work. Then it is reasonable to say that those who have the responsibility of veterinary hygiene in Denmark have qualified themselves by their education so that they can safely be charged with this important matter.

Meat Inspection.

The first regulations as to meat inspection are found in the Statutes of the Guild of the Butchers from the year of 1683, which prevent sale of " foul and infested " meat. They have scarcely achieved their object in spite of the large fines which defaulters were liable to. Among later regulations must be named the Prohibition against Blowing up of Meat, from the end of the eighteenth century. By Royal Resolution of the 20th of May, 1808, were fixed regulations for the killing of horses on appointed places and veterinary inspection of every horse which was to be killed. This was the first time that meat inspection was confided to veterinarians. The meat of the horse was to be marked and a price for its sale was settled. In those days there was among the population a strong aversion against hippophagia. For a long time no laws concerning meat inspection were proposed. Only in 1860 Stockfleth, tutor at the Veterinary High School, brought forward a fixed plan for a control of slaughtering in the meat trade. He stated that annually in Copenhagen alone were sold for consumption about 200 animals which either had been *crevé* before slaughtering or had been necessarily killed. On the basis of this plan the Veterinary Sanitary Commission suggested to the Ministry to establish a more rigorous control in the killing of horses and further a similar control in the killing of other domesticated animals. The question was put to the Royal Medical Board of Health which, for several reasons (enhancement of the price of meat, the opinion that consumption of meat of diseased and *crevé* animals—with few exceptions—was not dangerous to health), advised against the motion. The result

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was a Royal Resolution of 2nd September, 1869, abolishing all supervision and inspection of horse slaughtering. It must be stated that the Law on Local Sanitary Regulations (1858, 1862 and 1868) did not happen to contain any paragraphs as to meat and milk inspection. But in 1886 Copenhagen got its second Sanitary Regulations containing for the first time in Denmark regulations on meat inspection. In the seventies a couple of veterinary associations, as well as a committee for examination of labour conditions in Denmark had brought in resolutions and proposals as to supervision of market trade, erection of public abattoirs and examination of food, especially meat inspection.

These resolutions probably had the effect that the Ministry in 1879 brought in a motion for " Law on Supervision of Sale of Food." The motion was brought in year after year but only in 1891 was passed a " Law on Examination of Food," by which was established a private laboratory. But this law was a quite different thing from the original proposal which had contained regulations concerning veterinary inspection of slaughtering and trade in animals in all towns and commercial places.

During the proceedings of the law a member brought in a motion for obligatory erection of public abattoirs in Copenhagen and larger cities together with obligatory slaughtering and meat inspection. But every motion was frustrated by the astonishing lack of realization of the importance of the matter, at first from the medical profession and then from the farmers and breeders and of course from the struggling political factions. There was, however, a fact that in some degree caused establishing of meat inspection, namely the obvious dirtiness of the private slaughterhouses. For many years a series of committees dealt with the question of the scattered private abattoirs and the cattle market of Copenhagen, finally a new cattle market was opened in 1879 and was followed in 1883 by the first elements of a public abattoir consisting of a building divided into a row of small rooms, the most ideal places for slaughtering according to opinion of those days.

As formerly mentioned, Copenhagen got its second Sanitary regulations in 1886 and together with this was created obligatory slaughtering and meat inspection. Soon it became a custom among the communities like the metropolis to create a meat inspection by means of their sanitary regulations. The communities and not the State have the honour of having established an interior meat inspection for Denmark. Unfortunately this circumstance caused large communal differences to appear followed by prohibitions against importing meat into a commune from other places. Later motions which have intended to create a uniform State Meat Inspection have failed—as it

seems the communes have feared that a State Meat Inspection in many respects would pay the greater attention to export meat control that is growing more and more important.

The veterinarians by and by being occupied at meat inspection soon felt the lack of guiding principles in their responsibility. About the changing of the century was founded the Association of Danish Veterinarians for Meat Inspection, and subsequently a great many discussions of the different problems were held. In 1902 a committee elected by the Association elaborated a " Guide for Valuation of Meat," later on " Regulations for Examination of Meat," and finally " Proposal for Paragraphs on Meat Inspection in Sanitary Regulations." These regulations have later on been re-worded on several occasions and were soon authorized by communes and State.

It is fair to say that it is the veterinarians who have created the opinion that a public control with so important a food as meat is absolutely necessary.

Almost at the same time as was founded municipal meat inspection the question of control of the export bacon factories arose. Almost all the carcases were exported while the offal was sold mainly in Copenhagen. When meat inspection became obligatory here it was required that all export slaughterhouses which wanted to import offal should establish a control approved by the metropolis. Like Copenhagen other communities brought forward their claims, but as the different towns would not approve of each others meat inspection the conditions grew so confused that the State had to regulate them. In 1905 the export slaughtering houses got a uniform meat inspection and by a Law of 1906, succeeded by one of 1911, things were set in order but not without discontent of the communities.

According to Law of 1911 on Home Meat Inspection the provinces are divided into three groups :—

1. Districts possessing a public abattoir and obligatory slaughtering. The meat inspection here is regarded as equal to that of export slaughtering houses. Meat marked as I class can be imported into all other communities without further examination or tax. Meat from a public abattoir being marked as II class can also be imported into all other communities without any check, but a renewed examination can be required by the community concerned. At the export slaughtering houses there are not two different export marks—all that is to be exported must belong to class I.

2. Districts which have got municipal meat inspection but no public abattoir. Meat stamped as first class in such a district can be sent to any other district without paying any rate or subjected to

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further examination. (It can easily be understood that municipalities which have built public abattoirs at a considerable expense and hereby have created the best conditions for a satisfactory meat inspection are very discontented with this circumstance.)

3. Meat inspection only applying to the district concerned. (The meat must only be sold in the district where it has been stamped or in districts where there is no meat inspection.)

Owing to the rather rigorous regulations import from one community to another of sausages and other forms of preserved meat with exception of conserves practically does not take place. Examination of the meat for trichinosis was first established in Copenhagen. The abovementioned three groups of districts are free to decide whether they will insist on examination for trichinosis or not. In communes where such an examination exists meat and prepared meat of pigs can only be sold or imported when supplied with stamps or marking that an approved examination for trichinosis has taken place. Offal from pigs and diaphragms are excepted. A fee for this examination can only be enforced for pigs of more than 100 kg. (Trichinosis is rare in Danish pigs weighing less than 100 kg.)

A great many regulations complete the order for meat inspection. Many of these instructions concerning the export of meat have varied considerably according to the claims of different countries as to particular inspection, stamping, etc.

A Law made in 1922, embodied in one issued in 1925, aims at the prevention of other than technic utilisation of dead animals. Such animals' carcases must only be handled at special destruction establishments, of which there are now 92 lying dispersed over all the country. The establishments are regularly supervised in accordance with special regulations and there is no doubt that these instructions have been of very great importance. In a regulation of 1908, displaced by Regulation of 18th of May, 1925, concerning the cleanliness of abattoirs, together with Transport of Meat, there are given directions for dealing with meat and prepared meat in abattoirs, sausage-factories, shops, trains, and ships.

In 1922 a bacteriological laboratory was built in Copenhagen for meat examination. This inspection has proved to be of the greatest value and is now considered to be indispensable.

In Denmark there are at present 50 communes with public abattoirs, 399 with meat inspection according to paragraph 2 of the law, and 72 communes with local meat inspection. These communes amount to 520 of a total of 1,300 Danish communes and include about 40 per cent. of the Danish population. Further there are 71 pig, and 22 cattle,

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export slaughterhouses. In 1927 veterinary meat inspection in Denmark was responsible for the following quantities :—

	Cattle.	Fat Calves.	Sucking Calves.	Sheep.	Horses.	Pigs.
At Public Abattoirs	104,566	129,393	37,972	52,090	12,227	118,285
Pig Export Slaughter-houses	17,281	17,787	74,353	6,439	852	4,979,611
"Paragraph 2" Communes ..	45,789	58,207	49,574	17,104	4,649	77,689
Communes with local meat inspection ..	5,747	5,207	5,401	2,331	396	8,928
Cattle Export Slaughter-houses	15,085	28,098	728	6,924	856	9,604
In all :	188,468	238,692	168,028	84,888	18,980	5,194,117
mported to Meat Inspection Stns. :	7,114	17,689	27,950	45,336	922	21,952

The annual average per individual in Copenhagen is estimated at 75 kgs. (1901) and 66 kg. (1926). The number of communities which still have no public meat inspection is still a large one but is diminishing every year. In such communities quantities of meat have already been inspected in neighbouring communities. In other places the butchers have voluntarily requested a private meat inspection of the local veterinarians. Some regulations—especially those concerning dead animals—apply to the whole country but they can scarcely prevent daily breaking of the regulations, particularly as to diseased animals.

Meat inspection is exclusively carried out by veterinarians. In 1927 the number of veterinarians in Denmark amounted to 922. The following were employed at meat inspection :—

Two Veterinary Inspectors, assisted by two Assisting Veterinary Inspectors, have the supervision—under the General Inspector of Veterinary Sanitary Service—of all meat inspection. 197 veterinarians were employed as Meat Inspectors at public abattoirs and export slaughterhouses. Of these 91 were whole-time men, 295 practitioners, and eight veterinarians without any practice, were engaged in communities which had no public abattoirs (paragraph 2) or in local municipal meat inspection. Among these 303 veterinarians 32 were at the same time occupied at export slaughterhouses or public abattoirs, 491 have a right to carry out private meat inspection and the stamping of meat in communities where there was no public meat inspection.

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Milk Inspection.

Until the end of the last century there was practically no inspection of milk in Denmark. It was not until 1870 that a little more frequent inspection began in Copenhagen, but this only related to examinations in regard to the addition of water. From May, 1887, public milk inspection—based upon Sanitary Regulations from the preceding year—came into force in Copenhagen. The Sanitary Regulations contained only a few very plain paragraphs as to milk. (1) The Sanitary Commission had the supervision of milk as far as concerning its unsound condition, and falsifications regarding its alimentary and nutritive value. (2) Prohibited the sale of milk which had become sour and which could be recognized by sight or smell. (3) The Sanitary Commission could prohibit sale of milk in shops which were unsuitable, and prohibit importation from places where there was any dangerous infectious diseases among people or animals.

For the carrying out of these regulations a veterinarian was placed at the disposal of The Sanitary Commission. All that pertained to good and sound milk was included in these simple and convenient regulations. In the course of time, however, doubtful cases arose which required a legal decision.

The first aim of the milk inspection of 1887 was to set in order the dairy herds which at that time existed in Copenhagen. In 1888 there were 73 dairy herds with 1,473 cows in the most densely peopled part of the city. The cows were fed on dregs and furnished with extremely little litter. The condition of the stables was very unsanitary. In 1900 the number of these herds was reduced to, 28 with 297 cows, only a couple of the live stocks were fed on dregs, the rest being dealers' herds. Now practically no cattle byres exist in that part of the city, the inner town, which corresponded to Copenhagen of 1888.

In 1878 a Limited Milk Company (" Kobenhavns Mælkeforsyning") was established having the aim to produce sound milk. Privately and voluntarily this company endeavoured to create the best possible conditions in the byres as well as in the dairy. On this account the other dairymen (now feeling strong competition) began to advertise in all—and often irresponsible—ways. Suppression of these advertisements often required legal assistance or assistance from police authority. In 1890 veterinarians from Seeland had formed the Regulations for Veterinary Inspection of Live Stocks producing " Certified Milk Grade A for Children." These regulations served as a standard to all inspecting veterinarians. A number of methods were introduced with the idea of preserving milk, such as the addition of solut. formaldehyd. (which however was prohibited at once), the addition of

hydrogen peroxide, treating of milk with ozone or ultra-violet rays but all of them had only a short life. Their appearance caused some work before they were abolished. As to sterilization and pasteurization there are other circumstances to be regarded. Sterilization has got a rather considerable application especially in the making of the so-called " Export Cream " which is much used in Denmark. Pasteurization, introduced in 1888-89, was soon used to preserve the milk. Only momentary heatening to 80° C. is allowed in Denmark. There has been a work to do to show that even if milk is pasteurized one must not be indifferent as to how it is produced. It was most important and most difficult to enforce that milk must originate from healthy and clean cows.

At a rough estimate there are sold daily in Copenhagen 275,000 litres milk, of which two fifths are raw and three fifths pasteurized. Of this quantity about 13,000 litres are " Milk for small children " which must not be pasteurized, and about 3,500 litres Jersey milk, generally in raw condition. Practically all the skim milk, the greater part of the cream and all the butter-milk is pasteurized. Of the greatest importance is inspection of the cow byres. The first Regulation for Milk Inspection of 1904 contained a paragraph deciding that those milk traders who advertised that their milk originated from inspected live stock had to present veterinary certificates to show that an inspection really had been undertaken. The next Regulations for Milk Inspection of 1919 had, among many clauses, one deciding that all milk which is sold should be supervised by the Sanitary Commission, and that all orders given by this authority must be carried out. Milk (including milk for small children and Jersey milk) must only be obtained from dairies subjected to veterinary inspection according to regulations settled by the Sanitary Commission. The Regulations for Milk Inspection of 1919 contained such orders and paragraphs that it was now possible to have an effective control of milk from the place of production to the shop. It must be noted that it has not been necessary since to alter any paragraph in any material way. In 1925—with an amendment of 1925—there was given a law for all the Kingdom roughly indicating under what names and condition milk should be sold and this order, together with the result of experience called forth a new milk regulation for Copenhagen in 1924.

As formerly mentioned Danish Veterinary Associations had brought about certified copies in which veterinarian and farmer had to sign papers confirming that the cows have been examined, and to promise to obey the regulations and unhesitatingly correct any deficiencies which might be pointed out. In the beginning the certificates only

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contained general claims concerning cleanliness of stables, cows, milking, feeding, etc. By and by, however, they took a more and more specified character. It is not, however, enough to require inspections once or twice monthly. A periodically recurring after-inspection by a public appointed veterinarian must be regarded as necessary. To have a uniform examination of the condition of health of the cows the Danish Veterinary Medical Association issued Regulations for Carrying out Veterinary Inspection. By the Sanitary Commission of Copenhagen these regulations were fixed as a standard.

From 1903-4 we meet for the first time with regulations for milk inspection in Danish provincial towns and communities. At about the same time was passed the Law for the Fight against Tuberculosis of Cattle and Pigs, according to which all milk and butter milk being delivered from the dairies for food for animals, as well as cream of which is made into butter for export should be heated to 80° C. The Law, we suppose, also has caused the milk which the dairies sold for human food to be pasteurized too. At the end of 1910 twenty-three provincial towns and nine country communities had Government milk inspection—most of them using as a model the Milk Regulations of 1904 of Copenhagen. After 1909 53 towns have got paragraphs for milk inspection in their Sanitary Regulations. Almost all these towns have a paragraph deciding that the Sanitary commission has a right to demand to be informed of the origin of all milk which is sold, and to get from the seller twice a month veterinary certificates as to the condition of health of the live stock concerned. In the larger towns there have been erected special laboratories in which veterinarians undertake the chemical and bacteriological inspection.

In 1926 Copenhagen was supplied with milk from 3,778 live stock with about 60,000 cows. Of these 19 live stock with 2,000 cows provided " milk for small children " and 10 live stock with about 1,000 cows Jersey milk. Butter-milk and skim milk is not issued by dairies subjected to veterinary inspection. At an average every inhabitant daily consumes half a litre. Veterinary inspection is carried out by about 110 veterinarians of whom six are appointed by the dairy companies, the rest being private veterinarians. The direction of the inspection is supervised by a Chief Veterinary Surgeon and an Assistant Veterinarian, both exclusively being occupied under the Sanitary Commission. The veterinarians are assisted by the necessary office clerks, one police sergeant, and three policemen from the Sanitary Police, and finally the Laboratory, who have supervision of all the inspection. Amongst them they deal with a yearly registration of about 50,000 certificates.

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The following presents a survey of the diseases reported during eight years :

	Suffering from						Suspected of			
Year.	Tuberculosis (pointed out clinically).	Tuberculosis of the udder.	Other diseases of the udder.	Diseases of teats.	Diseases of uterus.	Other diseases.	Tuberculosis (clinically assignable).	Tub. of the udder.	Other diseases.	In all.
1920	97	34	1,833		598					2,562
1921	381	27	5,242		629					6,279
1922	349	54	7,172		841					8,416
1923	163	21	9,477		1,101		210	54		11,026
1924	152	7	12,314		2,251		66	42	13	14,845
1925	108	9	15,040	967	1,107	365	122	51	20	17,789
1926	165	35	22,059	778	909	221	81	29	1	24,278
1927	176	29	23,792	447	1,074	193	191	13	15	25,933

Nearly forty years ago virulent tubercle bacilli were found in about 14·28 per cent. of the milk samples (inoculation in rabbits and guinea pigs). In 1927 C. W. Andersen found the corresponding per cent. to be 4·59. These differences, however, do not pretend to represent merely statistics only but prove the value and necessity of veterinary inspection. Inoculation experiments ought to be carried out far more frequently, especially as to " milk for small children."

The numbers of cases of mastitis have increased very much in the last years, especially since the two last outbreaks of foot and mouth disease. It has been necessary to prohibit delivery of milk from many farms on account of mastitis or to take severe measures, such as totally separating healthy and diseased cows, ordering weekly veterinary inspection and a thorough microbacteriologic examination of the milk.

The Milk Inspection of Copenhagen should by no means be taken as a paragon for the ideal milk inspection of a town. It has its defects as all milk inspection must have. In Denmark, however, it has served as a pattern for milk inspection of other towns and communities.

HORSE-SHOEING IN ITALY.

By PROF. DR. A. ANTONINI,
Milan.

THE cradle of this art may be said to have been in Italy. Cesare Fiaschi produced the first treatise on horse-shoeing in 1539. In our age we find the names of Brambilla, Bassi, Chiari, Fogliata and Vachetta Bossi published quite recently a treatise on horse-shoeing which may be considered as the most complete and classical one that has yet appeared.

In our schools, instruction in horse-shoeing is not given the importance it deserves, it is looked upon as an additional subject, and only a six months' course is given in it by anybody in charge. This is quite insufficient. In view of this, the students have no opportunity for acquiring those practical notions that are demanded by the shoeing art, and in many schools the farrier's shop has been dispensed with.

Under these conditions, a veterinarian who is desirous of giving his attention to carrying on his profession, by lacking the necessary education in matters of podology, finds himself faced by serious difficulty when dealing with those cases of lameness and inability that are really most frequent in the phalanges of the horse and necessitate special shoeing.

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The lack of interest in horse-shoeing on the part of our schools has also the vexatious consequence that no one now devotes himself with any particular love to it, and the real culture of podology disappears completely which makes us lament bitterly the glorious names of Moorcroft, Coleman, Bracy, Clark, Lafosse, Girard, Bouley, Leisering, Brambilla and so many others that left us very important writings, which may even now be consulted with real advantage.

This is a serious loss for the advancement of horse-shoeing, not merely so (as the matter stands) but also it reflects on the Veterinary Profession which passes out men unlearned in the science and art of farriery.

It cannot be gainsaid that times have changed and that the great increase in mechanical traction has made itself felt as regards the importance of the horse.

On the other hand, the noteworthy development that has occurred in the study of infectious diseases in cattle has had for effect that the present Veterinary Surgeon gives more time to this study, neglecting to a considerable extent that of the horse, and therefore withal the art of shoeing it.

But if all this is true, it must not be concluded that horse-shoeing has decreased in importance and that its abandonment is justified. The number of horses that still exist for agricultural work, their much higher cost than the pre-war standard, the appreciable number of hunting horses, horses for horse-shows, and more particularly racing horses, whether for trotting or galloping, which perhaps reach a fabulous cost in figures, now render the art of shoeing more interesting than ever and make it a matter for greater responsibility requiring a perfect knowledge both on the part of the veterinarian and the farrier.

It is therefore expedient that the science and art of horse-shoeing should be fully taught in our veterinary institutes and that a study and knowledge of it be made compulsory for those that graduate into the profession.

In the year 1410, the statutes of the Farriers' Corporation provided that no one could carry on this art unless found to be competent by the officials attached to that corporation. Things are now very different, and anyone may freely carry on this important and difficult art, although lacking the most elementary scientific notions.

It is solely in the case of military farriers that it is made compulsory to attend the horse-shoeing course which is given them at the Pinerolo Cavalry School. There is, however, no school for civil farriers, contrary to what exists in a few foreign nations.

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It is therefore necessary to provide for this, and we hope that this provision will not be long in forthcoming, in the interests of our equine material, and of horse-shoeing, which will thus obtain greater consideration in society.

A few ambulant professors of agriculture have, of late, felt the want for imparting to farriers' pupils a practical course of horse-shoeing, and although this constituted a laudable departure, it does not suffice to meet its object. It shewed, however, the need for adequate culture on the part of the farrier wishing to exercise his art, conscientiously and skilfully. At the end of last year, the Chief of the Government, H.E. the Hon. Mussolini, received a special commission entrusted with the care of presenting to him the wishes of the Farriers' Corporation, in which were included the desire in particular for making compulsory a certificate for qualification to carry on the shoeing art. The Chief of the Government promised to take up the matter and, as is customary with him, the promise will certainly be kept.

There is, therefore, a breeze blowing up in favour of what may be hoped will prove a new era redounding to the advantage of the art of horse-shoeing.

THE 11th INTERNATIONAL VETERINARY CONGRESS.

Summaries of Some of the Papers*:

Foot and Mouth Disease.

By PROF. DR. MED. VET. and MED. h.c. OTTO WALDMANN,

Isle of Riems.

Summary.

THE investigation of foot and mouth disease has been greatly extended during the last ten years: practically all civilised countries in which animal-breeding has reached a high pitch of development have taken part in it. The work has been simplified by the discovery that guinea-pigs can be utilised as experimental animals. Biological problems have also been the subject of investigation. It has not yet been found possible to render the virus visible, but filtration and ultra-filtration experiments show that the size of the virus is about 3 microns.

* From the Official Proceedings of the International Veterinary Congress.

Success has been achieved in cultivating the virus in tissue cultures. Multiplication took place through 12 passages during 46 days 6·8 times 10^{20}. Plurality is the key to much of our knowledge regarding the epizootiology of the disease. There are three distinct strains which do not immunise against one another: a susceptible animal can be infected with the three strains in succession within a brief period. In addition to the pure strains, there are variants which are co-related to the type they most closely resemble. On the Island of Riems 176 strains from practically all European countries and from the Argentine have been differentiated. As far as Germany is concerned, it has been established that the spread of the disease is proportional to the number of strains and variants found.

As yet, we have not certain knowledge regarding the appearance and disappearance of new types of virus. But it is known that within a strain differences can be discovered, which come to light in the course of outbreaks; for example, predilection for one species (pig) and absence of infectivity for another species or for experimental animals.

Disinfection. The diseased animal and its stall are a serious source of danger in the spread of the disease. As a rule, an infected animal excretes the virus for ten days after it has become ill, in the milk, urine, fæces, and saliva. It persists longest in the saliva. The vitality of the virus after excretion depends upon (1) the substrata in which it is excreted, (2) the medium in which the virus is subsequently deposited. Temperatures below 10° conserve it, but those above 30° are harmful. Moist heat above 50° C. kills it rapidly. The virus is very susceptible to putrefaction and sunlight (ultra-violet rays). Artificial drying of the vesicular contents prolongs the life of the virus. Epithelium from the vesicles is far more resistant than vesicular fluid against all external influences. The most certain method of disinfection is the application of moist heat. As a chemical disinfectant, Minett recommends formalin, and the American Foot and Mouth Disease Commission, soda lye; the latter is also recommended by us. One per cent. solution is effective, and it may be used for spraying animals.

Inoculation. In spite of a very large number of experiments, the problem of active immunisation has not yet been solved. The formol-vaccine of Vallée and Carré has not given satisfactory results in our hands. Although we are still far from achieving active immunisation, there is at the present time more ground for hope.

Passive immunisation by means of immune serum has been thoroughly tested. The natural amount in reconvalescent blood can be increased by hyperimmunisation. Immune serum must be polyvalent. The potency is tested by means of guinea-pigs. The protection

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conferred by hyperimmune serum lasts for ten days. This method is only suitable for animals which are exposed to infection for brief periods, such as shows, auctions, markets, and while on journeys. Rigid application of the Veterinary Police regulations for the supervision of sales and markets cannot be dispensed with. If good results are to be obtained, protective inoculation must be carried out methodically in accordance with the sanitary regulations. At the present time, " ring " inoculations are being carried out on a large scale in Germany for the prevention of the spread of the disease. Protective inoculation in the form of simultaneous inoculation of healthy animals on infected premises is also being put into practice extensively. In severe outbreaks the mortality is reduced by this means from 10 per cent. to 1 per cent. The inoculation of young animals is characterised by the production of slight infections.

On the whole, serum inoculation as an integral part of the veterinary police regulations has proved itself to be a valuable aid against the disease.

The Nature of Milk Fever.

By PROF. J. RUSSELL GREIG, Ph.D., M.R.C.V.S.,
Director, Animal Diseases Research Institute, Moredun, Edinburgh.

Conclusions.

I. *The essential cause of milk fever is an acute blood-calcium deficiency.*

II. *The specific curative action of mammary inflation consists in raising the blood-calcium values.*

These conclusions are based on the following considerations :

(1) Milk fever is invariably associated with an acute hypocalcæmia.

(2) The more severe cases correspond with the lower calcium values.

(3) The fall in calcium is approximately coincident with the appearance of the symptoms.

(4) Tetany is a symptom in severe cases of milk fever and the occurrence of tetany is recognised as consequent upon pronounced hypocalcæmia.

(5) Mammary inflation raises the level of blood-calcium in a normal lactating animal.

(6) Mammary inflation elicits a marked rise in the level of blood-calcium in milk fever and cures the disease ; the process of cure, as manifested in the disappearance of the symptoms, corresponds with the rise of blood-calcium.

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Control of Swine Fever by Immunisation.

By M. DORSET,

Chief, Biochemic Division, U.S. Bureau of Animal Industry, Washington, D.C., U.S.A.

From these facts but one conclusion can be drawn, viz. that the widespread use of the simultaneous inoculation in the United States has been accompanied by decreased prevalence of swine fever.

Conclusions.

From the foregoing we may offer the following conclusions :

(1) Immunisation offers the most practicable and effective means of controlling losses from swine fever.

(2) Governmental inspection of serum producing establishments is of prime importance.

(3) The serum alone method is to be used in infected premises if the virus infection is complicated with bacterial infection (salmonella, pasteurella, erysipelas).

(4) The simultaneous inoculation is to be preferred in healthy herds in exposed districts. Here an excess of serum must be used.

(5) Immunisation should be performed only by skilled veterinarians.

Summary.

The author discusses the control of swine fever by the " Slaughter-out " method, the sanitary police method, and by immunisation. In addition, there are considered Government control of the production of swine fever immune serum and virus, the administration of serum alone and of the simultaneous inoculation, the application of serum in healthy herds, in exposed herds, and in infected herds. There is a general discussion of the effect of widespread use of the simultaneous inoculation upon the prevalence of swine fever in the United States. The following conclusions are submitted :

(1) Immunisation offers the most practicable and effective means of controlling losses from swine fever.

(2) Governmental inspection of serum producing establishments is of prime importance.

(3) The serum alone method is to be used in infected premises if the virus infection is complicated with bacterial infection (salmonella, pasteurella, erysipelas).

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(4) The simultaneous inoculation is to be preferred in healthy herds in exposed districts. Here an excess of serum must be used.
(5) Immunisation should be performed only by skilled veterinarians.

Infectious Abortion of Cattle, Sheep and Swine.

By PROF. H. HOLTH,
Director of The State Veterinary Institute, Oslo.

Summary.

The author deals briefly with the various causes of infectious abortion and reports a number of experiments made by him which show the relation between the number of sporadic abortions and cases of abortion produced by abortion bacilli. Thus at the Veterinary Institute there were investigated in the period 1912-1929 material from 16,743 cows which had aborted, of which 28·72% reacted more or less distinctly. The cows in question were distributed amongst 12,905 herds, of which 28·35% were found to be infected or to be suspected.

A short survey is given of the morphology of the abortion bacillus and its biological conditions, and it is mentioned that a cowhouse which has been cleansed and has remained empty during the summer has been found by experience to be free from infection.

The occurrence of the abortion bacillus in the animal's organism is discussed in greater detail, and the frequency of the abortion bacilli in the milk is further illustrated. The writer investigated the milk from 13 cows during a period of about one month after abortion had taken place, and was in a position to show abortion bacilli in nine of them. In a large stock 35 reacting cows were investigated, of which four gave a positive finding of bacilli ; and in another of 65, 35 of which proved to have bacilli in their milk. This stock was examined several times. On account of the mixing from many places of trade milk in Oslo it is comparatively free from abortion bacilli. Thus of 106 samples from shops only one was found to contain abortion bacilli, whilst 241 samples of mixed milk from farms gave abortion bacilli in 44 cases. The writer emphasises the great importance of milk infection in the spread of the disease and its presence amongst the various herds. In dealing with the diagnostic aids the author states that he considers the microscopical examination not to be very reliable, and he recommends as more exact methods the generally known antigen test or injection of material in

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guinea-pigs or rabbits. Guinea-pigs which are infected with abortion bacilli prove to be very susceptible to tuberculin.

The diagnostic blood investigations have been found to be very reliable. The author recommends the use of both the agglutination and the complement-fixation test. Of 39,935 blood tests examined, 23·76% gave immune substances. A description is given of a new method of finding abortion bacilli in milk. In discussing the campaign against the disease it is mentioned that in Norway the chief attention has hitherto been paid to the prevention of the spread of the disease, which on the whole have been successful.

With regard to the direct campaign against the disease in infected herds, the writer considers that little can be done as long as it occurs in an aggravated form. If, on the other hand, it has a more chronic course, the possibilities of combating it are considerably greater. It is recommended that by systematic blood investigations the reacting animals should be indicated, so that they can be moved into the same cowhouse and separated from the others. Strict isolation is not necessary, but it is important to remove chronic bacilli excretors as soon as possible. The author does not agree with the use of vaccine consisting of living abortion bacilli.

Infectious Abortion of Cattle, Swine and Sheep in the United States.

By DR. W. E. COTTON,

Superintendent of Experiment Station, U.S. Department of Agriculture, Bureau of Animal Industry, Bethesda, Md.

Conclusions and Recommendations.

The following conclusions and recommendations seem to be justified :—

(1) Greatly increased interest in infectious abortion has been stimulated in the United States by the spread of the malady to nearly every section of the country and the discovery that the disease has a significance for human health.

(2) Means of diagnosis are worthy of intensive study, and this is recommended. While the agglutination test, the most satisfactory one now in use, is reasonably accurate, it has not been sufficiently standardised, nor does it give information enough to be entirely satisfactory for regulatory work.

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(3) While the disease may be economically eradicated from many herds by the elimination or segregation of reactors, it is doubtful whether these methods are practicable in the majority. In these, less drastic but slower methods promise to be successful. It is recommended that the several methods of control receive exhaustive field trials under widely different conditions to determine their practicability.

(4) Vaccine probably has a limited place in abortion control, but its production, distribution, and use should be under rigid supervision. There is a possibility that a fairly avirulent vaccine may be developed which is free from the objectionable features that attend the virulent.

(5) It has been shown that cattle may be infected by the way of the conjunctiva and also probably through the unbroken skin. Further studies to determine the comparative importance of these routes and that of the digestive tract in both cattle and hogs are highly desirable and are recommended.

(6) The relation of swine abortion to that of the bovine species should be more definitely determined, particularly in connection with the ability of the causal agent of the former to invade and to maintain itself in the udders of cows.

(7) The question of human infection with *B. abortus* is of great importance because so many people are being exposed daily, both by contact with infected animals and through the consumption of milk containing this micro-organism. The sources of human infection and the possibility that the *Brucella melitensis* may invade the udders of cows and thus become a greater menace to human health deserve study.

The Standardisation of Biological Products.

Report by DR. A. EICHHORN,

Director, Veterinary Department, Lederle Laboratories, New York.

Conclusions.

There is urgent need for uniform standardisation of biological products. At the present time there are only a very limited number of these preparations which can be accurately standardised.

The creation of an International Committee for the purpose of collecting data and organising work on the standardisation of biological products would be advisable.

This Committee to be authorised to have active work carried out on the standardisation of biological products in various institutions.

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This Committee to establish central distributing places for cultures, toxins, diagnostic sera, etc., to be used in connection with the standardisation and preparation of biological products.

This Committee to publish procedures of standard methods of producing biological products as well as methods of procedure of applying biological tests for the diagnosis of certain diseases.

This Committee would also prescribe the technique on the application of the various biological tests and furnish the information for the uniform interpretation of the results.

Sterility—its Prophylaxis and Treatment.

By R. L. CONKIN, D.V.M., M.Sc.,

Assistant Professor of Animal Pathology, Macdonald College, Quebec, Canada.

Summary.

The losses from sterility are becoming increasingly heavy in large dairy herds, and they are common in herds said to be free from " contagious abortion." In the attempt to check any disease condition there are certain fundamental things which must be considered, sanitation and hygiene are always indispensable. A greater knowledge of nutrition as related to fertility would overcome some of the losses. Regulations have been laid down by State authorities for the care of animals under supervision for the elimination of Bang's disease, and if these are followed consistently by the breeders a reduction of all disease conditions may actually be observed. Such simple things as providing maternity stalls, the isolation of new purchases and keeping the young animals separated from the aged are of great value in controlling genital disease.

A knowledge of (*a*) the breeding records of the animals, (*b*) the duration of gestation, (*c*) placental and fœtal fluid examination, (*d*) state of genitalia after parturition, and (*e*) calfhood diseases are essential and have been discussed in relation to the prevention of sterility.

The sexual health records of the parents of prospective dairy animals should be considered carefully, since it is of greater value than the clinical examination in many cases, and it is available at an earlier date in the animal's life. A prognosis regarding the tentative value of a calf may be made from such data, which will be of inestimable value

in selecting the animals to be reared. This will prove an effective method in reducing the amount of sterility in a herd. The predisposition to sterility has been noted among bovine families, and this factor should merit further consideration.

Clinical examination of the organs of both sexes and a microseminal examination of the sire, together with a consideration of the above factors, will not only assist in eliminating the sterile animals from a herd, but will provide a sound prophylactic measure for one of the greatest "leaks" in the industry.

Veterinarians and live-stock owners have been misled concerning the treatments for sterility. The aim of both groups should be towards prevention rather than treatment. Treatment should be applied only when the animal may be restored to usefulness without danger of the condition which induced the sterility being handed on to the offspring. A correct diagnosis is essential before treatment can be applied, and then the treatment should be "symptomatic" in nature. No definite rules can be laid down for any case, but by combining the methods suggested by Hess, Albrechtsen and Williams along with the use of glandular extracts and ovarian transplants something may be accomplished.

Bovine Mastitis.

By F. C. MINETT, D.Sc., M.R.C.V.S.,

Director of the Research Institute in Animal Pathology, Royal Veterinary College, London.

Summary.

(1) Bovine mastitis is a disease of great economic importance to the dairy industry. The losses from this cause are mainly due to the great prevalence of the disease, specially of the form which is caused by streptococci, and to the fact that it occurs most commonly among cows at the period of life when milk production is at its maximum. The incidence of streptococcus mastitis tends to be highest in the larger herds, in some of which as many as 60 to 80 per cent. of the cows may be suffering from the disease in a latent form. Statistics show that on an average, in large herds, between 15 and 40 per cent. of the animals may be expected to show infection with mastitis streptococci.

The facts ascertained regarding milk-borne epidemics of scarlet fever and septic sore throat serve as a warning that bovine mastitis has a public health aspect which cannot be safely ignored.

(2) The majority of streptococcus strains which may be isolated from chronic mastitis conform to a common type which for the present may retain the name *Streptococcus mastitidis bovis*, while other strains,

responsible for some more acute forms, possess characters sufficient to distinguish them from this type.

Apart from streptococci, mastitis may also be caused by staphylococci, *B. pyogenes* and coliform bacteria among others. Mastitis due to staphylococci is frequently accompanied by more acute local and systemic changes and is more often fatal than the streptococcic form.

(3) The natural method of infection in mastitis has been discussed. In the case of cows in milk, widespread dissemination of the disease is probably brought about by the practice of milking animals indiscriminately, infection entering the udder through sores or abrasions on the teats.

(4) The ordinary streptococcic form of mastitis is insidious in its course, and latent infections are so common that laboratory methods are generally essential for diagnosis. These include cultural examination of the milk, microscopic examination of the cream or of the centrifuged sediment, measurement of the sediment volume and estimation of the reaction of the milk. Of these methods, cultural examination in a suitable medium, e.g. blood agar poured plates, can be regarded as the most reliable. With proper laboratory facilities, cultural diagnosis could be used on a large scale in practice, since experience has shown that a large proportion of infected cows can be detected by a single examination of a sample of mixed milk from the four quarters. The sediment and reaction tests, when applied to samples of quarter milk, are useful subsidiary methods. These two tests are of outstanding value, however, only when positive, since milk samples may show no excess of cells or increase of alkalinity on occasions when mastitis streptococci can be cultivated from them.

(5) In the present state of knowledge there is no good evidence to show that the resistance of the cow's udder to infection can be increased by vaccination or that complete cure can be effected by any method of treatment now available. A more promising means of control would be to pick out infected cows by appropriate methods and to put into force hygienic measures in order to prevent the dissemination of infection among healthy animals. The future will show to what extent mastitis can be controlled in this way.

Fowl Typhoid and Bacillary White Diarrhœa.

[By F. R. BEAUDETTE,
New Jersey Agricultural Experiment Station, New Brunswick, New Jersey, U.S.A.

Summary.

Fowl Typhoid and Bacillary White Diarrhœa are the two most important diseases of the avian species caused by organisms of the

intermediate group. The causative organism of fowl typhoid was first isolated by Klein in 1889, but the disease, as well as the organism, was later described under a variety of names. Although *Bact. gallinarum*, the cause of fowl typhoid, has many features in common with *Bact. pullorum*, the cause of bacillary white diarrhœa, the two remain as distinct species. Whereas *Bact. gallinarum* produces acid in maltose, dextrin and dulcite, *Bact. pullorum* fails to attack these. Furthermore, *Bact. pullorum* usually produces gas in some carbohydrate media, a feature never observed in the case of the typhoid organism.

Although fowl typhoid seems to attack adult birds by preference, it is occasionally seen in baby chicks. In this case the infection is undoubtedly contracted through the egg in many instances. This for the reason that the organism has been found to cause a localised infection in the ovaries of survivors of infection, in the yolk of the egg, and finally in the unabsorbed yolk of very young chicks dead of the disease. Outbreaks of the disease in chicks not exposed to any other known source of infection afford striking evidence of transmission through the egg.

The survival of infection on a farm from year to year is accounted for by assuming that certain survivors of infection continue to harbour the organism in the intestinal tract. That infection does not survive in the soil is evidenced by the fact that in soil of pH 7·0 the organism remains viable only for a period of about twelve to sixteen weeks, for a correspondingly shorter time in more acid soils, and probably not at all in soils below pH 6·2. On this basis, the prevention of typhoid may be possible by rearing young stock on clean ground apart from adult survivors of infection.

Bact. pullorum, the cause of bacillary white diarrhœa or pullorum disease, was first isolated by Rettger in 1899. He and his co-workers established that the infection was transmitted through the egg, and that the control of the disease depended upon the detection and removal of carriers of infection. The agglutination test proposed by Jones in 1910 has come into general use as a means of detecting infected birds. Although other tests have been proposed since 1910, none of them have proved to be as accurate as the agglutination test.

In New Jersey a single dilution of blood serum is used in making the test, that is, 3 c.c. of antigen are added to 0·5 c.c. of serum to give a 1 to 60 dilution. An apparatus for pipetting serum has been devised so that one operator may transfer up to 600 samples an hour. By means of another apparatus, doses of antigen are accurately and rapidly delivered. The use of such apparatus makes it possible to set up a large number of tests in a comparatively short period, so that the cost of this phase of eradication work is materially reduced.

Repeated annual testing of a flock results in the infection being reduced by about one-half each year until the disease is completely eradicated. When the percentage of infection is high on the original test, it is better to dispose of the flock and start another from a source known to be free of the disease. Unless importations are made from the outside, the disease does not reappear in a flock from which it has been eradicated. However, the recent finding of the disease in wild birds may result in its being spread by this agency.

Veterinary Science in Relation to Public Health, with Special Reference to the Production and Distribution of Milk.

By ARTHUR GOFTON, F.R.C.V.S.,
Edinburgh.

Summary.

The report submits a general résumé of the development of milk legislation and of the existing laws in Great Britain. The control and prevention of animal disease is vested in the Ministry of Agriculture and is under the direction of State Veterinary Officers, but questions referring to animal disease in relation to human health are dealt with by the State Departments of Health, which do not employ a Veterinary Surgeon. There is no Government Veterinary Public Health Service and the Veterinary Officer only enters the sphere of public health in the local administration of towns and county districts.

Milk legislation is not uniform. England and Scotland have separate milk Acts, which are administered with considerable divergence by local authorities under the direction of the State Departments of Health. The country districts take their responsibilities less seriously than the towns and cities.

The field work of milk inspection deals with (1) dairy stock and the premises of producers, which is the sphere of the Veterinary Public Health Officer; (2) distribution and sale, devolving on the Medical Officer or Sanitary Officer. This dual control is unsatisfactory.

It was not until 1899 that the Veterinary Surgeon secured a legally recognised place in general milk legislation, and then only in respect of tubercular disease of the udders of cows.

The present milk Act applicable to England and Scotland did not come into force till 1925, though in 1922, an amending Act providing for the official grading of milk, became immediately operative.

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England and Wales. The Milk and Dairies (Consolidation) Act, provides for the appointment of Veterinary Officers ; and the sampling of milk for bacteriological and other examinations. The sale for human use of milk from cows giving tuberculous milk, suffering from tuberculous emaciation, acute mastitis, and other diseases, is prohibited. Sanitary supervision of the production and distribution of milk and of the health of dairy workers is provided for.

Eight or nine counties have appointed whole-time Veterinary Officers and in some counties a panel of practising Veterinary Surgeons acting as part-time officers has been formed. There are, nevertheless, intensive dairying districts where no systematic inspections are carried out, and where action is only undertaken on the initiative of the towns in respect of samples of milk found, on delivery, to be injurious to human health.

Scotland. The Milk and Dairies (Scotland) Act also provides for the appointment of Veterinary Officers and whole-time or part-time officers have been appointed by nearly every local authority in Scotland. As a result, the cattle in dairies are inspected once at least in each year, and in many places oftener.

The Tuberculosis Order is complementary to the Milk Acts, and, subject to compensation, gives power to slaughter cows giving tuberculous milk or affected with tuberculosis of the udder, bovines suffering from tuberculous emaciation or advanced clinical tuberculosis. The Order, primarily a public health measure, is not intended as a means of controlling bovine tuberculosis. In 1928, out of 16,967 cattle slaughtered under the Order, at least 2,632 were known to be milk and udder cases.

The milk Acts are leading to an extensive survey of dairy premises and to progress in raising the standard of housing for dairy stock. In combination with clean milk competitions and other voluntary influences, they have also been productive of improvements in the hygienic collection and distribution of milk.

The grading of milk under the Milk (Special Designations) Order, is partial only in its application. The Order recognises four grades of milk : " Certified," " Grade A (Tuberculin Tested)," " Grade A " and " Pasteurised." The first two are the produce of tubercle-free cows. Pasteurised milk must be held at 145-150 degrees F. for 30 minutes. Retarders have now almost entirely displaced plant for " flash " pasteurisation. From 45 per cent. to 90 per cent. of the total daily supplies of certain representative cities is pasteurised.

Licensed producers in Scotland are able to maintain the fat standard of 3·5 per cent. required for " Certified," " Grade A (T.T.) " and

"Grade A" milks, and most samples are found to be well below the maximum bacterial standards permitted. The most common failure is in respect of the coliform test.

Progress in the establishment of tubercle-free herds has been very slow. In 1929, there were only 447 licensed tubercle-free herds in Great Britain, in addition to an unknown number of non-licensed herds. The slow progress is in part attributable to lack of public support.

Abstracts of Current Literature

Larrat, R.—Acute Coryza of the Cat. Thesis, Toulouse, 1929.—*Revue Vétérinaire*, April, 1930.

CORYZA of the cat is a frequent, contagious, often fatal malady occurring in two forms: a sporadic and enzootic type. Up to now it has not been the subject of very complete study; Larrat proposes to fill up the gap.

In the first part of his work the author studies the anatomy of the nasal cavities of the cat and shows that their narrowness is a considerable obstacle to the evacuation of mucus which becomes altered by reason of its prolonged sojourn there; in coryza the inflamed mucosa thickens, swells and narrows the respiratory passages. Their obstruction is often complete. Complications, almost constant, are explained by the anatomical relations of the nose with the sinuses, the eye, the cranial cavity, the mouth, the pharynx.

Coryza is favoured by a certain number of causes which lower the resistance of the terrain, paralysing the defensive means of the nasal cavities. Coryza is more frequent in the cat with short hair (Siamese) than in those whose fur is developed (Angoras, common cat); it arises during youth or at an advanced age of life more particularly when the general state of health is bad: coryza is frequent in scabby, eczematous cats, affected with cardiac trouble. Sudden variations of temperature are the regular cause of coryza; they explain the appearance of the malady in animals which lead a sedentary life, above all in spring and autumn and in the course of rainy winters. The chilling and sudden modifications of inspired air allow the microbes to bring about inflammation of the pituitary.

Bacteriological researches on 12 sick cats showed that the incriminating organisms were streptococci associated or not with staphylococci and coli bacilli; these microbes live as saprophytes in the nose of

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healthy cats. As soon as they have acquired pathogenic power they can become very virulent and are the cause of rapid extension of the coryza to all the cats of a district ; the etiology being due to contagion, the germs possess the necessary action to bring about, directly, nasal congestion and then inflammation.

The author then describes the symptoms of acute coryza. The first sign which attracts attention is sneezing ; it is rather slight, then more intense and is shown by painful crises. At the same time the nostrils are dry and itchy, the cat strokes its forehead with a fore paw. In serious cases, the general condition is modified : elevation of temperature, acceleration of pulse and respiration, shivering, inappetence, somnolence. These symptoms persist for two or three days, then discharge appears ; it is clear like water and very profuse at first, then becomes thicker, less abundant, muco-purulent, yellowish green colour, stale odour. It is very viscous and on drying forms crusts which obstruct the nasal cavities. Respiration can now become dyspnœic and snoring. The general condition is bad. In slight attacks inflammation is limited to the pituitary mucosa ; in serious cases, complications of the conjunctiva, keratitis, sinusitis, pharyngo-laryngitis, meningitis, stomatitis soon appear. The simple form may be cured or pass into the chronic state.

Larrat afterwards describes the lesions, sums up the rules of diagnosis and differential diagnosis and in the last part of his work studies the different methods of treating coryza.

The sick cat is put in a warm, airy place, free from draughts. The nostrils are cleaned with warm boric solution, one per cent. and two medicated inhalations are given daily. In the congestive stage of coryza prescribe one in 1,000 adrenolin solution or a conitine which are powerful decongestives. If these abortives do not produce results apply mustard sinapisms to the neck, shoulders, chest and kidney region ; inhalations to be often repeated ; instillations of polyvalent serum of Leclainche and Vallée. Different complications must be rationally treated.

This interesting memoir is completed by a certain number of observations taken in the service of the medical clinic of the Veterinary School of Toulouse.

We have had good success in the treatment of this disease in cats by syringing out the mouth with a weak solution of chinosol and glycerine, one per cent. ammonium chloride solution, or a little hazeline in warm water and also trickling any of the above solutions down the nostrils with an eye dropper or fountain pen filler.

[These lines may also be useful and instructive in the case of laboratory animals that now and then suffer from coryza.]

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THE TRADE EXHIBITION AT THE CONGRESS.

The following notes were received too late for inclusion in the space devoted to the Trade Exhibition section in the International Veterinary Congress Number:—

Gray Pad Company, Ltd., Suffolk Street, Birmingham. Notwithstanding that the trend of Veterinary Science, in these days, is in other directions than the Equine, there is still considerable sympathetic feeling towards the horse at work, and everyone has at some time or other evidenced the sight of horses doing their utmost to avoid actual falls on roads upon which it is practically impossible and unreasonable to expect them to work without artificial aid to prevent slipping.

Too much importance, therefore, cannot be attached to a method of shoeing, which, after numerous tests and practical trials, under H.M. Government and other Official Authorities, has proved itself to fulfil every claim made for it in preventing horses of all types slipping on any sort of road surface.

The Veterinary Profession, either from practical experience or from modern Veterinary Standard Works, has full knowledge of advantageous physiological facts concerning " Gragrip " Shoeing, which impels recognition by supplying shoes with an ever-clean, resilient and non-slip road or ground-bearing surface; so that the frog itself can effectively and healthily perform nature's intended work. These pads were exhibited at the recent International Veterinary Congress and were of especial interest to those Veterinary Delegates who practise in countries where the horse is still seen in the streets side by side with the motor.

Spratt's Patent Limited, 24/5, Fenchurch Street, E.C., exhibited samples of their well-known foods, of which there is variety to meet the need of every breed.

" Puppilac " will be found a very excellent substitute for the milk of the bitch where its supply is insufficient, and given to the bitch before and after whelping will wonderfully assist the flow of milk.

Among foods of great interest to the Veterinary Profession " Weetmeet" takes a high place. No. 1, a fine grade, will prove most useful for the rearing of pups, and the larger, No. 2, for brood bitches and adult dogs generally.

The general assortment of their foods is well known, and samples are always available on application.

They also had on exhibit a variety of most handy and useful appliances, including Trimming Combs in a most complete series; and Scissors and Clippers for every purpose. Indeed, it was evident they had " Anything for a Dog " as well as other Pet Stock.

Charles Hearson and Company Limited, Head Offices and Factories, Willow Walk, Bermondsey, London, S.E.1, and West End Showroom, 27, Mortimer Street, W.1, were showing apparatus for Pathological, Bacteriological, Physiological, and Chemical Research Laboratories, and in Veterinary Research. Microscopes were demonstrated of various makes including their new English type which is made at their factories and sold at prices ranging from £10 to £26. The latter consists

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of the latest model for research work including a built-in mechanical stage and all the necessary objectives (with 1/12th oil immersion).

Microtomes of various types were demonstrated and all sundries useful to the laboratory.

Their new catalogue (600 pages) of general and industrial laboratory apparatus has just been issued from the printers and will be forwarded free of charge to anybody on receipt of their application.

Obituary

THE LATE CAPT. J. T. AINSLIE WALKER, F.I.C., F.C.S.

CAPT. AINSLIE WALKER was well known to the scientific world as the joint author of the Rideal-Walker Coefficient Test for Antiseptics, and in the Veterinary world he had especially come into prominent notice of recent years as a worker in the values and uses of intestinal antiseptics, his researches having resulted in the discovery of the well-known drug " Dimol."

Ainslie Walker studied Chemistry and Bacteriology at Edinburgh University, being subsequently elected a Fellow of the Institute of Chemistry and a Fellow of the Chemical Society.

He was also a Fellow of the Royal Society of Medicine, an honour accorded to very few men who do not possess a medical, veterinary, or dental qualification. Commencing experimental work in antiseptic research in 1901, the object he always had in view was the discovery of an internal antiseptic of high potency which should be absolutely non-toxic, and in the benzene derivative " Dimol," Ainslie Walker always maintained that he had attained that object.

An indefatigable worker and a genial host and companion Ainslie Walker will be missed amongst a wide circle in the medical, veterinary, and pharmaceutical world.

Personal

The National Humane Review (June, 1930) quotes Dr. Raymond J. Garbutt, Chief Veterinarian of the American S.P.C.A. and President of the Veterinary Medical Association of New York City, as having made a report on a survey of the veterinary practice situation in greater New York. Doctor Garbutt states that where three veterinarians who were doing small animal practice have died, over fifty veterinarians are now located within an area of about forty miles in the proximity of New York City, for the treatment of small animals. (*The North American Veterinarian*, July, 1930.)

MR. ROBERT MACKAY DAVIDSON, B.Sc., M.R.C.V.S., has been appointed whole-time Veterinary Inspector for Banffshire, at a salary of £450, with a travelling allowance of £200.

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